IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	Confirmation No. 9247
Rodriquez et al.	
Application No.: 10/696,902	Examiner: Pawandeep Dhingra
Filed: October 30, 2003	Docket No.: XERZ 2 02200US01

Title: SOFTWARE UPGRADES FROM A PRINTER MODULE WITH ON-BOARD INTELLIGENCE

BRIEF ON APPEAL

Appeal from Group 2625

FAY SHARPE LLP

Patrick R. Roche, Reg. No. 29,580
Kimberly A. Textoris, Reg. No. 64,954
The Halle Building, 5th Floor
1228 Euclid Avenue
Cleveland, Ohio 44115-1843
216.363.9000
E-mail: ktextoris@faysharpe.com

Attorneys for Appellant(s)

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence (and any item referred to herein as being attached or enclosed) is (are) being transmitted to the USPTO by electronic transmission via the EFS Web on the date indicated below.

March 23, 2011 — Barbara Brazier

Date — Name: Barbara Brazier

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal and the present application is XEROX Corporation, by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 014994, Frame 0769.

II. RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings, known to Appellant, Appellant's representative, or the Assignee, that may be related to, or which will directly affect or be directly affected by or have a bearing upon the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-10, 13-17, and 20-25 are on appeal.

Claims 1-10, 13-17, and 20-25 are pending.

Claims 1-10, 13-17, and 20-25 are rejected.

Claims 11-12 and 18-19 are cancelled.

IV. STATUS OF AMENDMENTS

An Amendment After Final Rejection was filed on January 24, 2011. By an Advisory Action dated February 11, 2011, it was indicated that the requested amendments had been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention of claim 1 is directed to a replaceable module 22 for a printing apparatus 20 with programmable software controls ([0020], Figs. 1-3). The module comprises an internal memory comprising a non-volatile core portion 68 and a volatile portion 69 for holding stored instructions, a peripheral memory 810 external to the module, comprising increased storage space for holding a software upgrade for the printing apparatus programmable software controls ([0039], Figure 8), a communications interface 63 for exchanging information with the printing apparatus ([0039], Figure 8), and a microprocessor 64 connected to the internal memory, the peripheral memory 810 and the communications interface 63. The microprocessor performs the stored instructions to compare currently installed software and current machine status with available software upgrades ([0040], Figure 9), independent of whether the module has been replaced, to determine if the software upgrade is appropriate for installation and if an upgrade is appropriate, then automatically installs the software upgrade into the printing apparatus via the communications interface 63 when the replaceable module is installed in the printing apparatus by causing the printing apparatus to idle ([0040], Figure 9). The microprocessor 64 also upgrades software by extracting necessary components from a web based source or from an internal memory source ([0040]), monitors progress of the upgrade ([0041]), reports any faults ([0041]), contacts service personnel if the upgrades are not successfully completed ([0041]), and returns the printing apparatus to normal operation when the software upgrade is complete so that the software upgrade for the printing apparatus is inhibited from being repeated (0041]).

The communications interface 63 may comprise a wired or wireless communication element ([0026], [0038]). The replaceable module may further comprise a peripheral memory interface 800, where the microprocessor 64 is connected to the peripheral memory 810 through the peripheral memory interface 800 ([0039]). The peripheral memory 810 may comprise flash memory, flashcards, and/or nonvolatile integrated circuit chip memory, and/or bubble memory ([0039]).

The invention of claim 9 is directed to a method of operating a replaceable module 22, in a printing apparatus. The method comprises installing the replaceable module 22 in the printing apparatus, allowing a processor element on board the replaceable module 22 to interrogate the printing apparatus, wherein the interrogating includes identifying previously installed replaceable modules ([0040], Figure 9), and determining which software components in the printing

apparatus need to be upgraded, independent of whether the module has been replaced, by comparing software currently installed in the printing apparatus with available software upgrades ([0040], Figure 9). The method further includes accessing external memory 810 to retrieve and load any necessary software code components for an upgrade ([0040]), automatically installing the software code into the printing apparatus by the processor element in the replaceable module so that a field engineer or other individual need not perform the software upgrade for the printing apparatus ([0042]), monitoring the progress of the software upgrade ([0041]), reporting any fault occurring during the upgrade, placing a service call if the upgrade is unsuccessful, and returning the printing apparatus to normal operating mode when the software upgrade is complete ([0041]).

The processor element may be a microprocessor 64 and the memory may be accessed via a network connection, which may comprise the Internet or by a wireless communication element ([0040]).

The invention of claim 16 is directed to a method of operating a replaceable module 22 having a processor element 60 on board the replaceable module, in a printing apparatus ([0023]). The method comprises installing the replaceable module 22 in the printing apparatus, placing the printing apparatus into diagnostic mode 900 ([0040], Figure 9), allowing a processor element 60 on board the replaceable module 22 to interrogate the printing apparatus ([0040], Figure 9), interrogating the printing apparatus by comparing currently installed software and current machine status with available software upgrades 902 ([0040], Figure 9), independent of whether the replaceable module has been replaced, and determining from the interrogation which software components in the printing apparatus need to be upgraded 904 ([0040], Figure 9). The method further includes automatically scheduling as determined by the processor element when a software upgrade should occur 906 ([0040]), accessing external memory 810 as directed by the processor element 60 in order to retrieve and load necessary software code components to perform an upgrade ([0040] Figure 9), installing the software code into the printing apparatus 914 by the processor element 60 in the replaceable module 22 ([0041]), monitoring the progress of the software upgrade 916 ([0041]), reporting any fault occurring during the upgrade, placing a service call if the upgrade is unsuccessful 922 ([0041]), and returning the printing apparatus to normal operating mode when the software upgrade is complete 920 ([0041]).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review:

Claims 1-4, 7, 9-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,532,351 to Richards et al. (hereinafter "Richards") in view of U.S. Patent Application Publication No. 2004/0080775 to Owen et al. (hereinafter "Owen") in further view of U.S. Patent No. 5,930,553 to Hirst et al. (hereinafter "Hirst") in further view of U.S. Patent No. 7,146,412 to Turnbull (hereinafter "Turnbull") and in further view of U.S. Patent Application Publication No. 2004/004500 to Hara (hereinafter "Hara").

Claims 5-6, and 8 are rejected under 35 U.S.C. § 103 as being unpatentable over Richards in view of Owen in further view of Hirst and in further view of Turnbull in further view of Hara and in further view of well-known art.

Claims 16-17 and 20-22 are rejected under 35 U.S.C. § 103 as being unpatentable over Richards in view of Owen in further view of U.S. Patent No. 7,262,873 to Rasche et al. (hereinafter "Rasche") in further view of U.S. Patent Application Publication No. 2003/00763305 to McIntyre (hereinafter "McIntyre") in further view of Hirst in further in view of Turnbull and in further view of Hara.

Claims 23-25 are rejected under 35 U.S.C. § 103 as being unpatentable over Richards in view of Owen in further view of Rasche in further view of McIntyre in further view of Hirst in further view of Turnbull in further view of Hara and in further view of well known art.

VII. ARGUMENT

By means of brief review, independent claim 1, and similarly independent claims 9 and 16, is directed to a replaceable module for a printing apparatus with programmable software controls. The replaceable module comprises an internal memory for holding stored instructions, a peripheral memory holding a software upgrade for the printing apparatus programmable software controls, a communications interface for exchanging information with the printing apparatus, and a microprocessor connected to the internal memory, the peripheral memory and the communications interface. The microprocessor, among other things, performs instructions stored in the internal memory to compare currently installed software and current machine status with available software upgrades to determine if the software upgrade is appropriate, and automatically implements the upgrade or schedules a time in the future to implement the upgrade, if needed.

A. *The Present Claims Distinguish Patentably Over the References of Record*

1. The Rejection of Claims 1-4, 7, 9-10 and 12-15 is Erroneous

Claims 1-4, 7, 9-10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards et al. in view of Owen et al., further in view of Hirst et al., further in view of Turnbull, and further in view of Hara. Appellants respectfully traverse for at least the following reasons. Richards, Owen, Hirst, Turnball, and Hara do not, individually or in combination, teach or suggest the each of the limitations as recited in the present claims.

Particularly, the references fail to teach or suggest a replaceable module that includes an internal memory component comprising a non-volatile core portion and a volatile portion for holding stored instructions, and peripheral memory, external to the module, that includes increased storage space for holding software upgrades for the printing apparatus programmable software controls. According to the Examiner, Richards discloses a replaceable module for a printing apparatus that includes non-volatile (CRUM) memory for holding instructions, and, although Richards fails to disclose that the internal memory also comprises a volatile portion for holding stored instructions, the Examiner cites Turnbull as teaching a module for a printing apparatus that includes internal memory with a non-volatile core portion (hard disk) and volatile portion (volatile memory) for holding stored instructions. Therefore, the Examiner argues, it would have been obvious to one of ordinary skill in the art to modify the replacement module

and its system as disclosed by Richards to have both the non-volatile and volatile memory for the benefit of having both primary and secondary storage options.

Appellant submits that Turnball is directed to a computing device, such as a printer, with a controller that may include a data processing unit, a volatile memory (RAM) and a nonvolatile memory. (See col. 6, lines 8-12). As illustrated in Figure 3, the controller is included within the computing device and there is no teaching or suggestion that such a computing device is in fact a replaceable module for a printing apparatus. The process described in Turnball is directed to upgrading firmware and driver modules on a computing device, for example a printer. However, there is no teaching or suggestion in Turnball of a replaceable module, within the computing device (printer) that has its own internal memory comprising both non-volatile and volatile memory for holding stored instructions, as is presently claimed. Therefore, Appellant submits that the teachings of Turnball are not communicable to those of Richards, since the volatile memory component of Turnball is contained within the computing device itself, not a replaceable module. Combining the teachings of Turnball with that of Richards would not provide the presently claimed replaceable device internal memory, since the replaceable module of Richards would still only include non-volatile memory, while the actual printing device control board, or other non-replaceable component, would include the volatile memory taught in Turnball.

Appellant further submits that the cited references fail to teach a microprocessor performing instructions stored in a peripheral memory to compare currently installed software and current machine status with available software upgrades to determine if the software upgrade is appropriate for installation, and if an upgrade is appropriate, then automatically installing the software upgrade into the printing apparatus. The Examiner first argues that Hirst teaches such a feature; however, Appellant submits that Hirst specifically teaches the comparison of a version number or manufacturing date for a new consumable with a previously stored version number or manufacturing date, and if the newly installed consumable has a newer number, an installation date is requested. Hirst does not disclose any comparison of the actual software, as presently claimed, nor is an upgrade automatic.

The Examiner then additionally submits that Turnbull teaches the same feature, specifically that the CPU performs stored instructions to compare a current version to an upgrade version to determine if an upgrade is appropriate. However, Appellant submits that Turnbull

discloses EEPROM 312, which is included within the non-volatile memory 308 and EEPROM 332, which is contained within the host computer. Accordingly, since the Examiner argues above that the non-volatile memory within the controller is internal memory, the Examiner appears to be referring to EEPROM 332, as the peripheral memory. However, EEPROM 332 does not include instructions, but rather the BIOS for the host computer. (See col. 6, lines 55-56). As is known in the art, BIOS is built into a computer and is charged with loading and starting an operating system. There is absolutely no teaching or suggestion in Turnbull that would indicate this to be a peripheral source of memory including **increased storage space** for **holding a software upgrade** as is presently claimed.

Moreover, Turnbull discloses that upgrade applet 314 initiates searches for upgrades by initiating a browser to facilitate navigation over a network to one or more predesignated locations, wherein current versions are compared to any upgrades. The applet is configured to send an email notification or alert to one or more predesignated email addresses to notify users of available upgrades. The notifications include a selectable option allowing a user to designate a time that the upgrade will be installed. For a no-cost upgrade, the selectable option is configured to initiate a second applet embedded in the email that will automatically download and install the upgrade, and if there is a cost, the second applet facilitates an e-commerce transaction. However, regardless of the cost or lack thereof of the upgrade, affirmative action by a user **is required** prior to the download of the upgrade. (See col. 7, lines 18-40). After selecting this option, the upgrade may automatically install, however, this process is not completely automatic as is presently claimed, such that no affirmative selection action needs to occur. Appellant submits that the Examiner's reading of Turnbull is improper, and by designating a preferred time for an upgrade, a user is necessarily required to act on behalf of the upgrade.

With regard to the teachings of Turnbull, the Examiner argues that Turnbull in fact teaches that the upgrades are downloaded automatically regardless of the fact that upgrades are installed after the user selection of an option, since the claims do not specifically define a completely automatic installation without any user involvement. Appellant submits that the claims recite "...to determine if the software upgrade is appropriate for installation and if an upgrade is appropriate, then **automatically install** the software upgrade into the printing apparatus via the communications interface..." (emphasis added). Appellant submits that the definition of automatically, according to Merriam-Webster's Dictionary, is "largely or wholly

involuntary". Therefore, user intervention is completely opposite to the plain meaning of the word automatically, and the requirement to explicitly state that the upgrade is performed without user intervention is unnecessary and without merit. Turnbull clearly requires user intervention, and is therefore not automatic as is presently claimed.

Further, Appellant maintains that Hara, cited by the Examiner as teaching monitoring the progress of an upgrade, reporting any faults, and contacting service personnel if the upgrades are not successfully completed, is improperly included as prior art since it is clearly directed to non-analogous art. In the Advisory Action, the Examiner submits that Hara is proper prior art, in that it is reasonably pertinent to the particular problem with which the application was concerned. However, Appellant submits that the present application is concerned with upgrading programmable software controls in a printing apparatus via a microprocessor-enabled replaceable module. In contrast, Hara is directed to a software license management system and a recording medium to protect the licensees of software packages, which Appellant submits is not in any way pertinent to the particular problem of the present application. Appellant respectfully submits that although Hara broadly and generally refers to installing software packages and monitoring this process within the disclosure, since Hara is directed to a software licensing management system, one skilled in the art would **not be inclined** to even look to the teachings of Hara in the first place, when faced with the particular problem presented in the presently claimed invention, specifically providing a replaceable module capable of automatically locating and implementing programmable software control upgrades. If a person skilled in the art does not pick up a reference, they will necessarily fail to benefit from its teachings.

For at least the aforementioned reasons, Appellant submits that the subject claims distinguish patentably over the references of record. As such, reversal of the rejection is respectfully requested.

2. The Rejection of Claims 16-17 and 20-22 Must be Reversed

Claims 16-17 and 20-22 are rejected under 35 U.S.C. § 103 as being unpatentable over Richards in view of Owen in further view of Rasche et al., in further view of McIntyre in further view of Hirst in further in view of Turnbull and in further view of Hara. Appellants respectfully traverse.

In addition to the comments above, the Examiner cites McIntyre as disclosing automatically scheduling, as determined by the processor element, when a software upgrade

should occur, and it would have been obvious to one of ordinary skill in the art to modify the replacement module in Richards to include the techniques as taught by McIntyre. Appellant's respectfully disagree and submit that McIntyre is directed to a document production system that includes restoring default printer control panel settings while minimizing losses in material or human resources, which is in complete disagreement with the presently claimed invention, that is concerned with upgrading software using a replaceable module. Accordingly, McIntyre is clearly not pertinent to the concern of the present application, nor in the same field of Appellant's endeavor. Accordingly, Appellant submits that McIntyre is directed to non-analogous art and is therefore improperly included as prior art in the proposed obviousness rejection.

As such, Appellant submits that the subject claims distinguish patentably over the references of record and reversal of the rejection is respectfully requested.

CONCLUSION

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that claims 1-10, 13-17, and 20-25 are in condition for allowance. For all of the above reasons, Appellants respectfully request this Honorable Board to reverse the rejections of claims 1-10, 13-17, and 20-25.

3-23-2011

Respectfully submitted,

Patrick R. Roche
Reg. No. 29,580

Kimberly A. Textoris
Reg. No. 64,954

FAY SHARPE LLP
The Halle Building, 5th Floor
1228 Euclid Avenue
Cleveland, Ohio 44115-1843
216.363.9000
E-mail: ktextoris@faysharpe.com

APPENDICES

VIII. CLAIMS APPENDIX:

The claims involved in the Appeal are as follows:

1. (Previously Presented) A replaceable module for a printing apparatus with programmable software controls, the module comprising:

an internal memory comprising a non-volatile core portion and a volatile portion for holding stored instructions;

a peripheral memory external to said module, comprising increased storage space for holding a software upgrade for the printing apparatus programmable software controls;

a communications interface for exchanging information with the printing apparatus; and,

a microprocessor connected to the internal memory, the peripheral memory and the communications interface, the microprocessor performing the stored instructions to compare currently installed software and current machine status with available software upgrades, independent of whether said module has been replaced, to determine if the software upgrade is appropriate for installation and if an upgrade is appropriate, then automatically install the software upgrade into the printing apparatus via the communications interface when the replaceable module is installed in the printing apparatus by causing said printing apparatus to idle, upgrading software by extracting necessary components from a web based source or from an internal memory source, monitor progress of the upgrade, report any faults, contact service personnel if the upgrades is not successfully completed, and return the printing apparatus to normal operation when the software upgrade is complete so that the software upgrade for the printing apparatus is inhibited from being repeated.

2. (Original) The replaceable module of claim 1, wherein the communications interface comprises a wired communication element.

3. (Original) The replaceable module of claim 1, wherein the communications interface comprises a wireless communication element.

4. (Original) The replaceable module of claim 1, further comprising a peripheral memory interface, where the microprocessor is connected to the peripheral memory through the peripheral memory interface.

5. (Previously Presented) The replaceable module of claim 4, where the peripheral memory comprises flash memory.

6. (Original) The replaceable module of claim 5, where the peripheral memory comprises flashcards.

7. (Original) The replaceable module of claim 4, where the peripheral memory comprises nonvolatile integrated circuit chip memory.

8. (Original) The replaceable module of claim 4, where the peripheral memory comprises bubble memory.

9. (Previously Presented) In a printing apparatus, a method of operating a replaceable module, the method comprising:

installing the replaceable module in the printing apparatus:

allowing a processor element on board the replaceable module to interrogate the printing apparatus, wherein the interrogating includes identifying previously installed replaceable modules;

determining which software components in the printing apparatus need to be upgraded, independent of whether the module has been replaced, by comparing software currently installed in the printing apparatus with available software upgrades;

accessing external memory to retrieve and load any necessary software code components for an upgrade;

automatically installing the software code into the printing apparatus by the processor element in the replaceable module so that a field engineer or other individual need not perform the software upgrade for the printing apparatus;

monitoring the progress of the software upgrade;

reporting any fault occurring during the upgrade;

placing a service call if the upgrade is unsuccessful; and

returning the printing apparatus to normal operating mode when the software upgrade is complete.

10. (Original) The method of claim 9 wherein the processor element is a microprocessor.

11. (Cancelled)

12. (Cancelled)

13. (Previously Presented) The method of claim 9 wherein the memory is accessed via a network connection.

14. (Previously Presented) The method of claim 13 wherein the network connection is comprised of the Internet.

15. (Original) The method of claim 13 wherein the network connection access is accomplished by a wireless communication element.

16. (Previously Presented) In a printing apparatus, a method of operating a replaceable module having a processor element on board the replaceable module, the method comprising:

installing the replaceable module in the printing apparatus:

placing the printing apparatus into diagnostic mode;

allowing a processor element on board the replaceable module to interrogate the printing apparatus;

interrogating said printing apparatus by comparing currently installed software and current machine status with available software upgrades, independent of whether the replaceable module has been replaced;

determining from the interrogation which software components in the printing apparatus need to be upgraded;

automatically scheduling as determined by the processor element when a software upgrade should occur;

accessing external memory as directed by the processor element in order to retrieve and load necessary software code components to perform an upgrade;

installing the software code into the printing apparatus by the processor element in the replaceable module;

monitoring the progress of the software upgrade;

reporting any fault occurring during the upgrade;

placing a service call if the upgrade is unsuccessful; and

returning the printing apparatus to normal operating mode when the software upgrade is complete.

17. (Original) The method of claim 16 wherein the processor element is a microprocessor.

18. (Cancelled)

19. (Cancelled)

20. (Previously Presented) The method of claim 16 wherein the memory is accessed via a network connection.

21. (Previously Presented) The method of claim 16 wherein the memory is comprised of flashcards.

22. (Original) The method of claim 20 wherein the network connection access is accomplished by a wireless communication element.

23. (Original) The method of claim 16 wherein the interrogation further comprises gathering machine and software version indicia, model number, serial number, and

other identifying information, as would be desirable for completing an inventory of machines in the field.

24. (Original) The method of claim 23 wherein the identifying information is passed via the network connection.

25. (Original) The method of claim 23 wherein the identifying information is stored in memory on the replaceable module.

IX. EVIDENCE APPENDIX

NONE

X. RELATED PROCEEDINGS APPENDIX

NONE